Excel 2013 (and later) “Flash Fill”  
S. Gulwani

- Infers iterations over cells based on one or a small number of examples
  - Type and press <enter> to accept suggestions
  - Otherwise press <ESC>
  - Or use ctrl-E to execute


**Apparition**  *W. Lasecki et al., CHI 2015*

- Crowd-powered refinement of UI prototype
- Crowd-powered “wizard-of-Oz” animation of prototype in response to designer’s spec

[Image of crowd-powered refinement](https://www.youtube.com/watch?v=1BCB6P7FwWY)

**SketchExpress**  *S. Lee et al., UIST 2017*  
*(built on Apparition)*

- Crowd-powered creation, editing, and saving of animated behaviors for UI prototypes by workers
- “Demonstrate–remix–replay” approach
  - Workers can demonstrate behavior that is recorded, remix it to modify parameters, and replay it when needed
  - Recorded behaviors are saved with prototype

[Image of crowd-powered animation](https://www.youtube.com/watch?v=A_Pngz1mbDs)